Figure 1

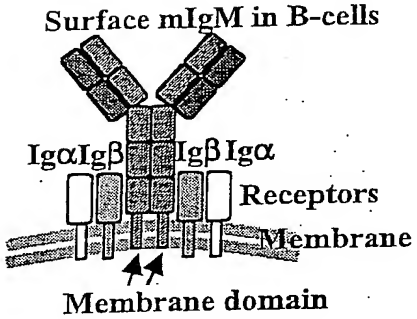

Surface mIgM in B-cells
IgαIgβ
IgβIgα
Receptors
Membrane
Membrane domain

Figure 2

A

Igα-1S (sense oligo for Igα containing and SpeI and HindIII cloning sites)
5′ TAG TGA ACT AGT AAG CTT GCC ACC ATG CCA GGG GGT CTA GAA GCC CTC A 3′

Igα-221A (antisense oligo for Igα containing EcoRI and ClaI cloning sites)
5′ GTC TAG ATC GAT GAA TTC TCA TGG CTT TTC CAG CTG GGC ATC 3′

Igβ-1S (sense oligo for Igβ containing SpeI and HindIII cloning sites)
5′ TAG TGA ACT AGT AAG CTT GCC ACC ATG GCC ACA CTG GTG CTG TCT TCC ATG 3′

IgB-229A (antisense oligo for Igβ containing XhoI and ClaI cloning sites)
5′ GTC TAG ATC GAT CTC GAG TCA TTC CTG GCC TGG ATG CTC TCC TAC CGA 3′

B.

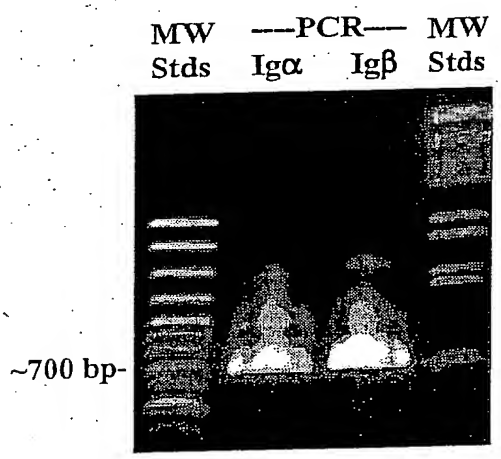


Figure 3

p3.1NeoIg_ Length: 681

```
        Translation
HindIII Signal M   P   G   G   L   E   A   L   R   A   L   P   L
AAGCTT GCCACC ATG CCA GGG GGT CTA GAA GCC CTC AGA GCC CTG CCT CTC

 L   L   F   L   S   Y   A   C   L   G   P   G   C   Q   A   L   R
CTC CTC TTC TTG TCA TAC GCC TGT TTG GGT CCC GGA TGC CAG GCC CTG CGG

 V   E   G   G   P   P   S   L   T   V   N   L   G   E   E   A   R
GTA GAA GGG GGT CCA CCA TCC CTG ACG GTG AAC TTG GGC GAG GAG GCC CGC

 L   T   C   E   N   N   G   R   N   P   N   I   T   W   W   F   S
CTC ACC TGT GAA AAC AAT GGC AGG AAC CCT AAT ATC ACA TGG TGG TTC AGC

 L   Q   S   N   I   T   W   P   P   V   P   L   G   P   G   Q   G
CTT CAG TCT AAC ATC ACA TGG CCC CCA GTG CCA CTG GGT CCT GGC CAG GGT

 T   T   G   Q   L   F   F   P   E   V   N   K   N   H   R   G   L
ACC ACA GGC CAG CTG TTC TTC CCC GAA GTA AAC AAG AAC CAC AGG GGC TTG

 Y   W   C   Q   V   I   E   N   N   I   L   K   R   S   C   G   T
TAC TGG TGC CAA GTG ATA GAA AAC AAC ATA TTA AAA CGC TCC TGT GGT ACT

 Y   L   R   V   R   N   P   V   P   R   P   F   L   D   M   G   E
TAC CTC CGC GTG CGC AAT CCA GTC CCT AGG CCC TTC CTG GAC ATG GGG GAA

 G   T   K   N   R   I   I   T   A   E   G   I   I   L   L   F   C
GGT ACC AAG AAC CGC ATC ATC ACA GCA GAA GGG ATC ATC TTG CTG TTC TGT

 A   V   V   P   G   T   L   L   L   F   R   K   R   W   Q   N   E
GCA GTG GTG CCA GGG ACG CTG CTG CTA TTC AGG AAA CGG TGG CAA AAT GAG

 K   F   G   V   D   M   P   D   D   Y   E   D   E   N   L   Y   E
AAG TTT GGG GTG GAC ATG CCA GAT GAC TAT GAA GAT GAA AAT CTC TAT GAG

 G   L   N   L   D   D   C   S   M   Y   E   D   I   S   R   G   L
GGC CTG AAC CTT GAT GAC TGT TCT ATG TAT GAG GAC ATC TCC AGG GGA CTC

 Q   G   T   Y   Q   D   V   G   N   L   H   I   G   D   A   Q   L
CAG GGC ACC TAC CAG GAT GTG GGC AAC CTC CAC ATT GGA GAT GCC CAG CTG

 E   K   P   *   EcoRI
GAA AAG CCA TGA GAATTC
```

Figure 4

p3.1ZeoIg_ Length: 705

Translation

HindIII Signal M A T L V L S S M P C H W
AAGCTT GCCACC ATG GCC ACA CTG GTG CTG TCT TCC ATG CCC TGC CAC TGG

L L F L L L L F S G E P V P A M T
CTG TTG TTC CTG CTG CTG CTC TTC TCA GGT GAG CCG GTA CCA GCA ATG ACA

S S D L P L N F Q G S P C S Q I W
AGC AGT GAC CTG CCA CTG AAT TTC CAA GGA AGC CCT TGT TCC CAG ATC TGG

Q H P R F A A K K R S S M V K F H
CAG CAC CCG AGG TTT GCA GCC AAA AAG CGG AGC TCC ATG GTG AAG TTT CAC

C Y T N H S G A L T W F R K R G S
TGC TAC ACA AAC CAC TCA GGT GCA CTG ACC TGG TTC CGA AAG CGA GGG AGC

Q Q P Q E L V S E E G R I V Q T Q
CAG CAG CCC CAG GAA CTG GTC TCA GAA GAG GGA CGC ATT GTG CAG ACC CAG

N G S V Y T L T I Q N I Q Y E D N
AAT GGC TCT GTC TAC ACC CTC ACT ATC CAA AAC ATC CAG TAC GAG GAT AAT

G I Y F C K Q K C D S A N H N V T
GGT ATC TAC TTC TGC AAG CAG AAA TGT GAC AGC GCC AAC CAT AAT GTC ACC

D S C G T E L L V L G F S T L D Q
GAC AGC TGT GGC ACG GAA CTT CTA GTC TTA GGA TTC AGC ACG TTG GAC CAA

L K R R N T L K D G I I L I Q T L
CTG AAG CGG CGG AAC ACA CTG AAA GAT GGC ATT ATC TTG ATC CAG ACC CTC

L I I L F I I V P I F L L L D K D
CTC ATC ATC CTC TTC ATC ATT GTG CCC ATC TTC CTG CTA CTT GAC AAG GAT

D G K A G M E E D H T Y E G L N I
GAC GGC AAG GCT GGG ATG GAG GAA GAT CAC ACC TAT GAG GGC TTG AAC ATT

D Q T A T Y E D I V T L R T G E V
GAC CAG ACA GCC ACC TAT GAA GAC ATA GTG ACT CTT CGG ACA GGG GAG GTA

K W S V G E H P G Q E * XhoI
AAG TGG TCG GTA GGA GAG CAT CCA GGC CAG GAA TGA CTCGAG

Figure 5

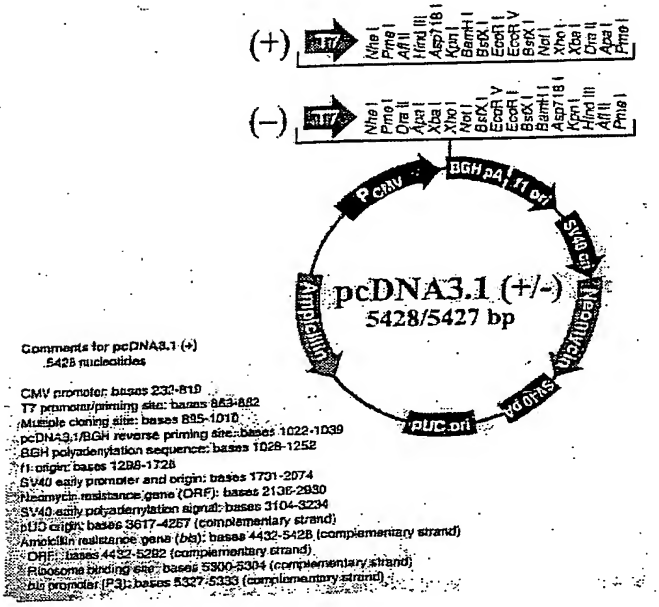


Figure 6

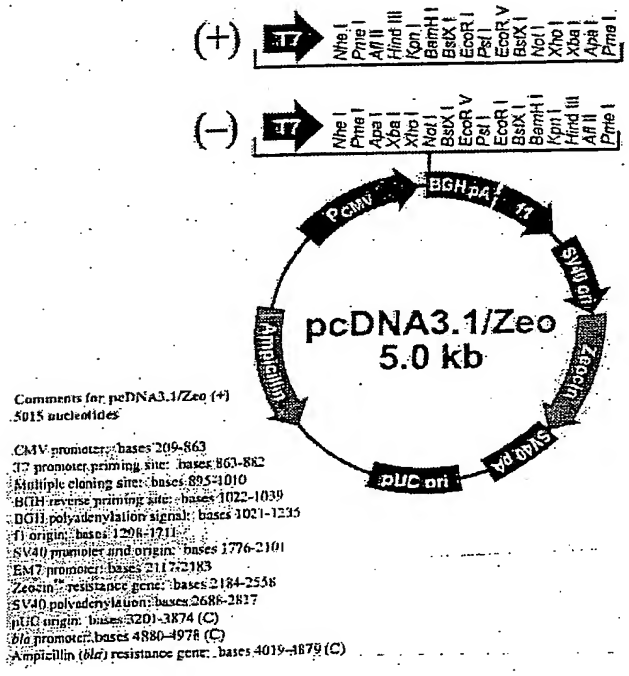


Figure 7.

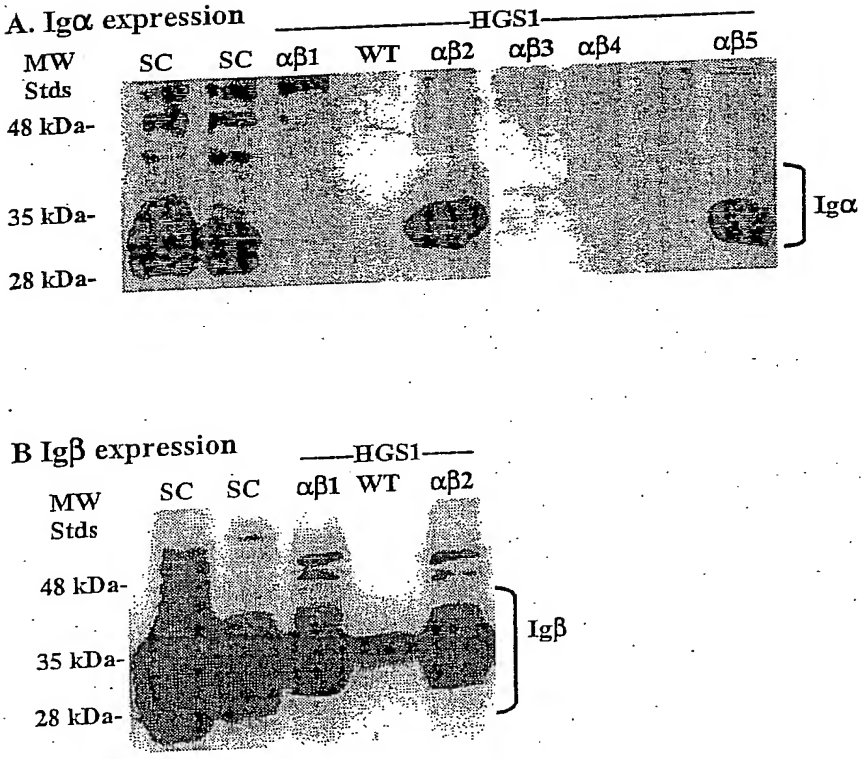

A. Igα expression
HGS1
MW Stds
SC
SC
αβ1
WT
αβ2
αβ3
αβ4
αβ5
48 kDa-
35 kDa-
28 kDa-
Igα
B Igβ expression
HGS1
MW Stds
SC
SC
αβ1
WT
αβ2
48 kDa-
35 kDa-
28 kDa-
Igβ

Figure 8

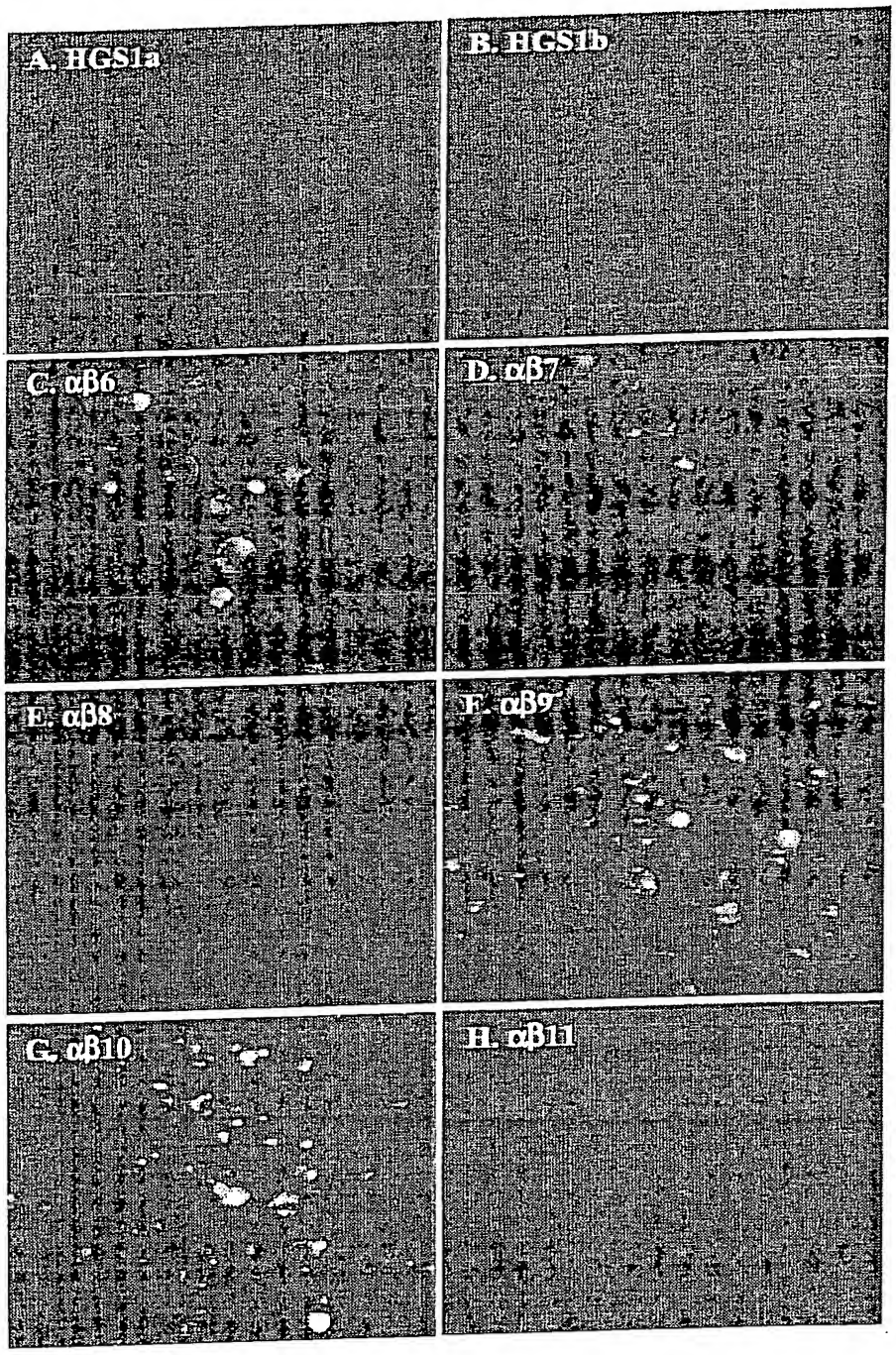


Figure 8 (continued)

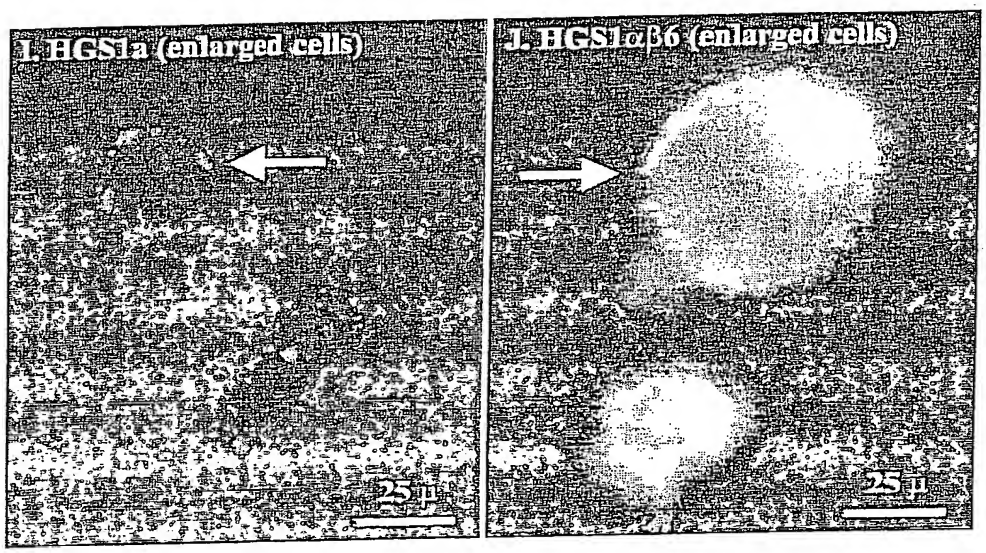
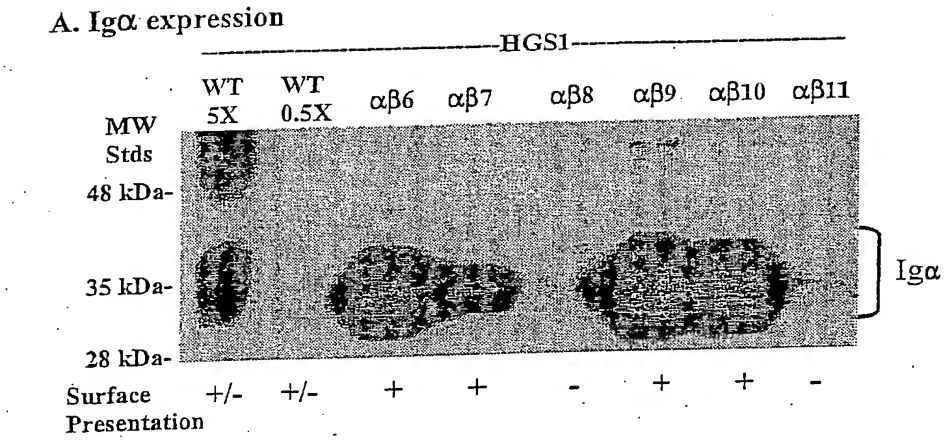


Figure 9


A. Igα expression
HGS1
WT 5X
WT 0.5X
αβ6
αβ7
αβ8
αβ9
αβ10
αβ11
MW Stds
48 kDa-
35 kDa-
28 kDa-
Igα
Surface Presentation
+/-
+/-
+
+
-
+
+
-

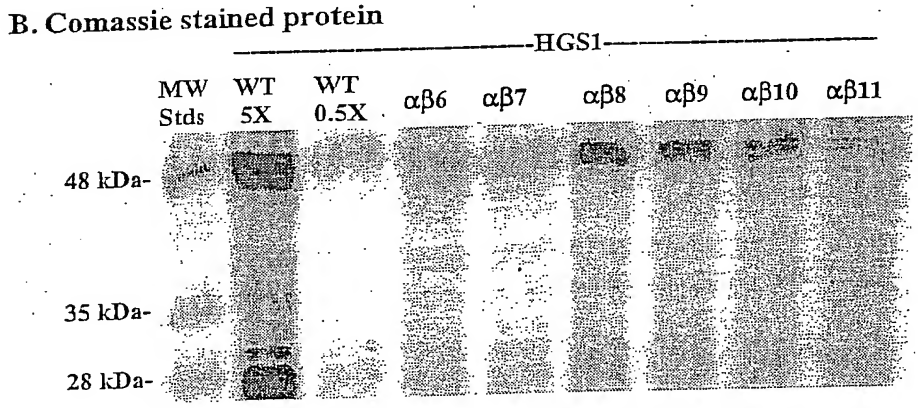

B. Comassie stained protein
HGS1
MW Stds
WT 5X
WT 0.5X
αβ6
αβ7
αβ8
αβ9
αβ10
αβ11
48 kDa-
35 kDa-
28 kDa-

Figure 10

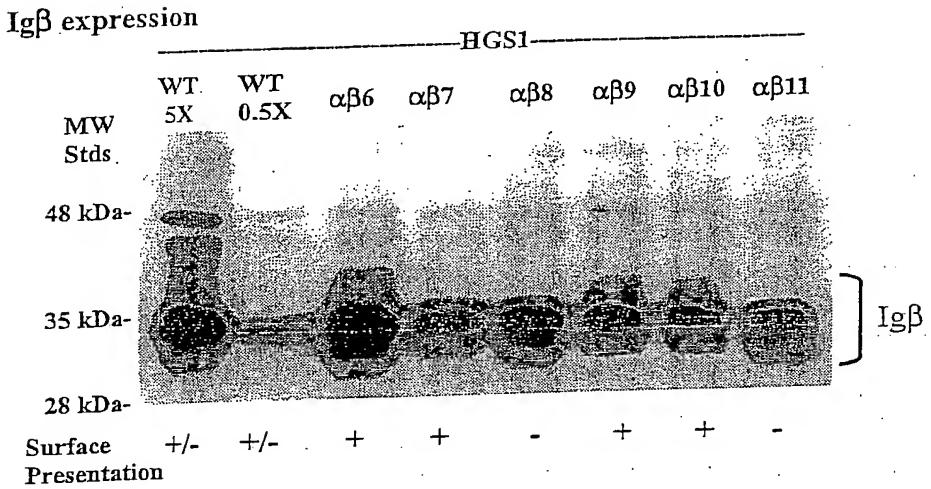

Igβ expression
HGS1
WT 5X
WT 0.5X
αβ6
αβ7
αβ8
αβ9
αβ10
αβ11
MW Stds
48 kDa-
35 kDa-
28 kDa-
Igβ
Surface Presentation
+/-
+/-
+
+
-
+
+
-

Figure 11

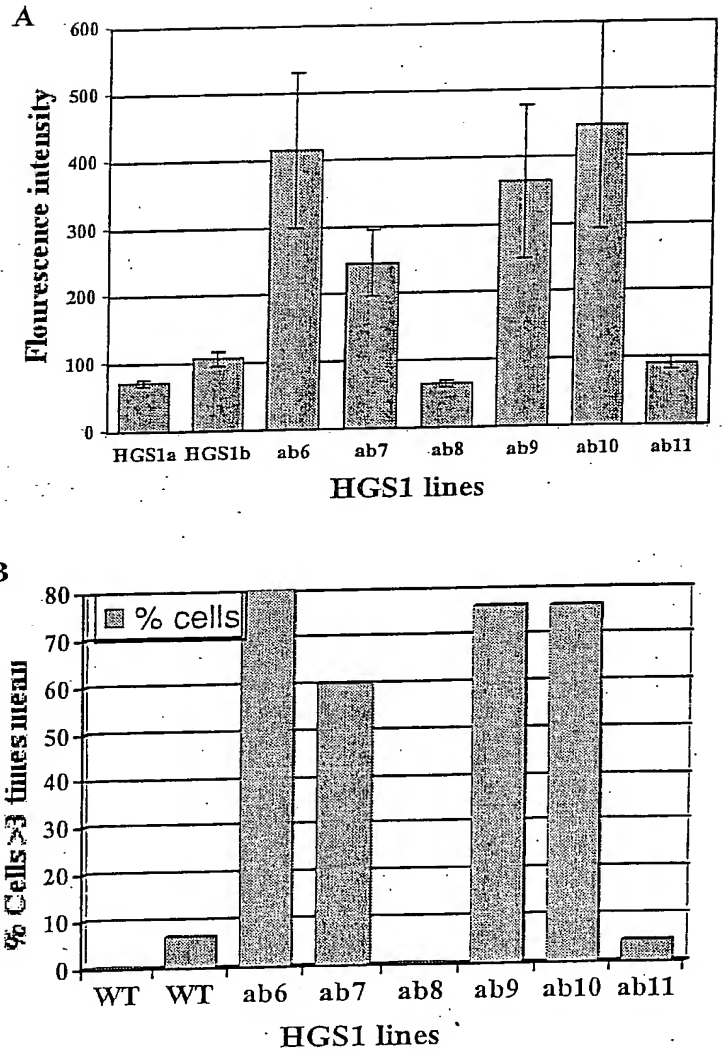

A
Flourescence intensity
600
500
400
300
200
100
0
HGS1a HGS1b ab6 ab7 ab8 ab9 ab10 ab11
HGS1 lines
B
% Cells >3 times mean
% cells
80
70
60
50
40
30
20
10
0
WT WT ab6 ab7 ab8 ab9 ab10 ab11
HGS1 lines

Figure 12

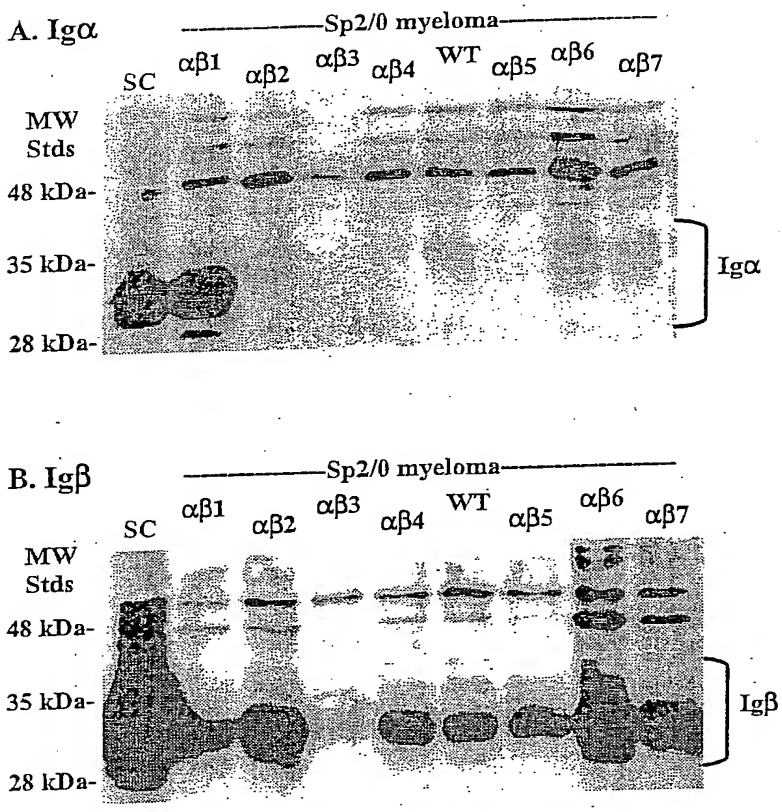
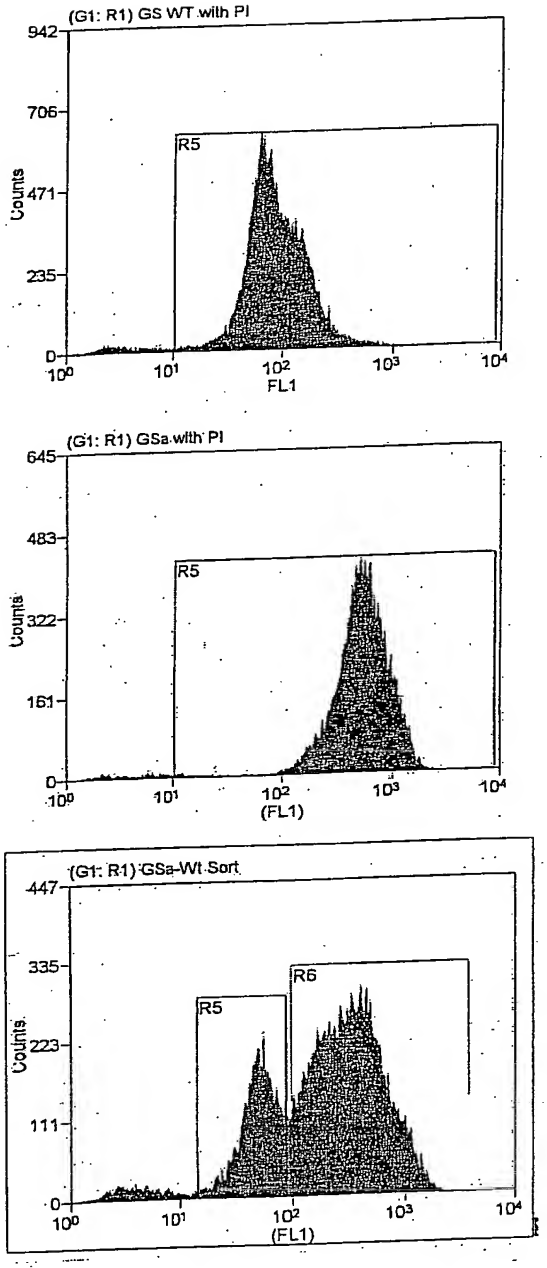

A. Igα
Sp2/0 myeloma
SC
αβ1
αβ2
αβ3
αβ4
WT
αβ5
αβ6
αβ7
MW Stds
48 kDa-
35 kDa-
28 kDa-
Igα
B. Igβ
Sp2/0 myeloma
SC
αβ1
αβ2
αβ3
αβ4
WT
αβ5
αβ6
αβ7
MW Stds
48 kDa-
35 kDa-
28 kDa-
Igβ

Figure 13


(G1: R1) GS WT with PI
942
706
471
235
0
Counts
R5
10^0
10^1
10^2
10^3
10^4
FL1
(G1: R1) GSa with PI
645
483
322
161
0
Counts
R5
10^0
10^1
10^2
10^3
10^4
(FL1)
(G1: R1) GSa-Wt Sort
447
335
223
111
0
Counts
R5
R6
10^0
10^1
10^2
10^3
10^4
(FL1)